# NATIONAL ACID DYES ON WOOL

NATIONAL ANILINE & CHEMICAL CO.
INCORPORATED
NEW YORK

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# NATIONAL ACID DYES ON WOOL

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# NATIONAL ACID DYES ON WOOL

## Dissolving the Dyestuffs

Soft water, preferably condensed water, should be used for dissolving the dyestuff, and for preparing the dyebath. The dyestuff should first be made into a thin paste with cold water; boiling water is then poured over this paste and the whole stirred or boiled until solution is complete. The dissolved dyestuff should be added to the dyebath through a fine sieve or cloth.

## METHODS OF APPLICATION

The usual method for applying each dyestuff is indicated by the Roman numerals—I, II, III, IV and V—and a description of each method is given on pages 1 to 5. When making compound shades it is always advisable to select dyestuffs from the same group. In every instance, the material to be dyed should enter the dyebath properly cleansed and wet out. The addition to the bath of ½ to 1% of National Nacconol NR will materially assist in wetting out the goods and aid in producing thoroughly level dyeings. When making additions either of dyestuff or acid, the steam should be shut off and the solution to be added should be well diluted with cold water.

In all cases the percentages given in this book are based upon the weight of material to be dyed.

## Method I

Acid dyes to be applied with sulfuric acid.

Dyeing is generally carried out with the addition of—
10—20% Glauber's salt crystals
2— 4% Sulfuric acid

The dyebath is prepared with the necessary amount of dyestuff and Glauber's salt crystals together with half the required amount of sulfuric acid.

The material is entered at 120° F., the bath brought slowly to the boil and boiled for ½ hour. The remainder of the acid is then added and boiling continued for ½ hour longer.

## Acid Dyes Suitable for Application by Method I

*Quinoline Yellow
*Fast Wool Yellow 3GL
*Fast Light Yellow 2G
Naphthol Yellow S
Wool Yellow Extra Conc.
Resorcine Yellow
*Wool Orange GG Crystals
Croceine Orange Y Conc.
Wool Orange A Conc.
Wool Orange R Conc.
*Fast Crimson GR
Acid Light Red G
Acid Alizarine Red GWN
Fast Fuchsine G
Fast Wool Red GL
Fast Crimson R
Fast Wool Red BL
*Fast Fuchsine 6B
*Fast Crimson 6BL
Acid Fuchsine D
Fast Wool Violet 2R
Azo Wool Violet 4B
Acid Green L Extra
*Acid Fast Violet BG
*Alizarine Sapphire BLN
*Alizarine Sapphire FS
Fast Light Blue BL
*Alizarine Sapphire
*Alizarine Sapphire BN
*Indigotine
*Alizarine Sapphire 2GL
*Alizarine Sapphire SE
Wool Blue CGW
Wool Blue CGG
Azo Fast Blue B High Conc.
Azo Fast Blue 2R High Conc.
Azo Fast Blue G High Conc.
Wool Navy Blue B
*Alphazurine 2G
Alphazurine B Conc.
*Alphazurine FG Conc.
Alphazurine A
*Wool Green S
*Alkali Fast Green 2G
*Alkali Fast Green 10G

*For subsequent shading the dyestuffs marked with an asterisk (*) should be used.*

See Method II for additional dyes that, in certain instances, may be applied by Method I.

## Method II

Acid dyes to be applied with acetic acid, the bath being exhausted with sulfuric acid.

Prepare the bath with

10—20% Glauber's salt crystals
5—10% Acetic acid (28%)

The goods are entered at 120° F., the bath brought slowly to the boil and boiled for ½ hour.

1—2% Sulfuric acid is then added and boiling continued ½ hour longer.

## Acid Dyes Suitable for Application by Method II

†Azo Yellow A5W
†Metanil Yellow 1955
Lake Scarlet G
Lake Scarlet R
†Croceine Scarlet MOO
Cloth Red G
Wool Scarlet BR
†Brilliant Scarlet 3R
Fast Red S Conc.
Cloth Red R
Wool Red 40F
†Azo Rubine Extra
Cloth Red 2R
Cloth Red B
Azo Bordeaux
Azo Bordeaux SS Conc.
†Acid Brilliant Red 4BL
†Fast Acid Violet GRF
xWool Violet 4BN
xWool Violet 5BN
xBrilliant Wool Blue B
xBrilliant Wool Blue FFR Extra
xBrilliant Wool Blue G Extra
xBrilliant Wool Blue FFB Extra
Alizarine Blue GS
†Alizarine Fast Blue RB
Alizarine Blue GRL
xBrilliant Wool Blue N
Fast Wool Blue B
Fast Wool Blue R
Induline B Extra
xFast Acid Green B
Alizarine Cyanone Green G Extra
Naphthol Green B
Resorcine Brown Y
Resorcine Brown R
Resorcine Brown 3R
Resorcine Brown RN
Buffalo Black 3G
Buffalo Black 8B
Buffalo Black NB
Buffalo Black NBR
Buffalo Black 10B
Buffalo Black AR
Buffalo Black RB
Buffalo Black GRF Conc.
Buffalo Jet Black EM
Buffalo Black CW

*Neutral Dyeing Dyestuffs. The dyes marked with a cross* (x) *draw well in a neutral bath and may be used in union dyeing. They are also suitable for application by Method III.*

The dyes marked with a dagger (†) may be applied by Method I in certain instances as, for example, in full shades.

## Method III

Acid dyes to be applied with acetic acid, the bath being exhausted with acetic acid.

Prepare the dyebath with
10—20% Glauber's salt crystals
1½— 5% Acetic acid (28%)

The material is entered at 120° F., the bath brought slowly to the boil and boiled ½ hour.

1½—5% Acetic acid (28%) is then added and boiling continued for ½ hour longer.

## Acid Dyes Suitable for Application by Method III

Milling Yellow NGS
Milling Yellow XN
Milling Yellow 3G
Milling Yellow GGCW
Milling Yellow O Conc.
Fast Acid Yellow GS
Milling Orange GR
Milling Orange G
Milling Orange R
Acid Milling Red G
Milling Scarlet G Conc.
Erie Scarlet B
Acid Milling Red RN
Milling Red R
Erie Fast Red FD
Erie Scarlet 3B
Milling Red B Conc.
Brilliant Milling Red B Conc.
Brilliant Milling Red 3B
Acid Brilliant Red BNR
Acid Bordeaux B
Alizarine Violet AD
Brilliant Acid Blue 6BN
Brilliant Acid Blue GI
Wool Fast Blue GL
Wool Fast Blue BL
Alizarine Cyanone Green G Extra
Fast Acid Brown RG
Neutral Brown AN
Neutral Brown RN
Neutral Brown RD
Fast Acid Grey JE
Durol Black 2B
Durol Black BA
Durol Black B
Durol Black J

*Neutral Dyeing Dyestuffs. All these dyestuffs draw well in a neutral bath and may be used in union dyeing.*

See Method IV for additional dyes that may often be applied by Method III.

## Method IV

Acid dyes to be applied with ammonium acetate.

Dyeing is generally carried out with the addition of

10—20% Glauber's salt crystals
2½— 5% Ammonium acetate

The goods are entered at 120° F., the bath brought slowly to the boil and boiled for ½ hour. If necessary

1—4% Acetic acid (28%) is then added and boiling continued ½ hour longer.

## Acid Dyes Suitable for Application by Method IV

Fast Wool Cyanone G
Fast Wool Cyanone R
Fast Wool Cyanone 3R
xMilling Navy Blue 4B
xFast Acid Blue WF
xMilling Black B

*Neutral Dyeing Dyestuffs. All the above dyes may be used in a neutral bath in union dyeing.*

Those dyes marked with a cross (x) may often be applied by Method III.

## Method V

Acid dyes (Eosines etc.) to be applied below the boil.

Dyeing is generally carried out with the addition of

10—20% Glauber's salt crystals
5—10% Acetic acid (28%)

The dyebath is prepared with the necessary amount of dyestuff and Glauber's salt crystals together with half the required amount of acetic acid.

The material is entered at 120° F., the dyebath raised to 160-180° F., and run at that temperature for ½ hour. The remainder of the acetic acid is then added and dyeing continued for ½ hour longer.

## Acid Dyes Suitable for Application by Method V

Eosine YS
Eosine OJ
Eosine BS
Rhodamine 6GDN Extra
Erythrosine
Rhodamine B
Rose Bengal

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*The statements made herein with respect to our several products are expressions of our opinion, based upon careful tests and investigations, and are not warranties.*

# DYER'S PERCENTAGE TABLES

**This table provides the practical dyer with a convenient method of converting percentages of dyestuffs into avoirdupois**

| % | For 10 Lbs. | For 50 Lbs. | For 100 Lbs. |
|---|---|---|---|
| 10 | 1 lb. | 5 lbs. | 10 lbs. |
| 9 | 14 oz. 175 gr.* | 4½ lbs. | 9 lbs. |
| 8 | 12 oz. 350 gr. | 4 lbs. | 8 lbs. |
| 7 | 11 oz. 87 gr. | 3½ lbs. | 7 lbs. |
| 6 | 9 oz. 263 gr. | 3 lbs. | 6 lbs. |
| 5 | 8 oz. | 2½ lbs. | 5 lbs. |
| 4 | 6 oz. 175 gr. | 2 lbs. | 4 lbs. |
| 3 | 4 oz. 350 gr. | 1½ lbs. | 3 lbs. |
| 2 | 3 oz. 88 gr. | 1 lb. | 2 lbs. |
| 1 | 1 oz. 263 gr. | 8 oz. | 1 lb. |
| 0.99 | 1 oz. 256 gr. | 7 oz. 403 gr. | 15 oz. 368 gr. |
| 0.98 | 1 oz. 249 gr. | 7 oz. 368 gr. | 15 oz. 298 gr. |
| 0.97 | 1 oz. 242 gr. | 7 oz. 333 gr. | 15 oz. 228 gr. |
| 0.96 | 1 oz. 235 gr. | 7 oz. 298 gr. | 15 oz. 158 gr. |
| 0.95 | 1 oz. 228 gr. | 7 oz. 263 gr. | 15 oz. 88 gr. |
| 0.94 | 1 oz. 221 gr. | 7 oz. 228 gr. | 15 oz. 18 gr. |
| 0.93 | 1 oz. 214 gr. | 7 oz. 193 gr. | 14 oz. 385 gr. |
| 0.92 | 1 oz. 207 gr. | 7 oz. 158 gr. | 14 oz. 315 gr. |
| 0.91 | 1 oz. 200 gr. | 7 oz. 123 gr. | 14 oz. 245 gr. |
| 0.90 | 1 oz. 193 gr. | 7 oz. 88 gr. | 14 oz. 175 gr. |
| 0.89 | 1 oz. 186 gr. | 7 oz. 53 gr. | 14 oz. 105 gr. |
| 0.88 | 1 oz. 179 gr. | 7 oz. 18 gr. | 14 oz. 35 gr. |
| 0.87 | 1 oz. 172 gr. | 6 oz. 420 gr. | 13 oz. 403 gr. |
| 0.86 | 1 oz. 165 gr. | 6 oz. 385 gr. | 13 oz. 333 gr. |
| 0.85 | 1 oz. 158 gr. | 6 oz. 350 gr. | 13 oz. 263 gr. |
| 0.84 | 1 oz. 151 gr. | 6 oz. 315 gr. | 13 oz. 193 gr. |
| 0.83 | 1 oz. 144 gr. | 6 oz. 280 gr. | 13 oz. 123 gr. |
| 0.82 | 1 oz. 137 gr. | 6 oz. 245 gr. | 13 oz. 53 gr. |
| 0.81 | 1 oz. 130 gr. | 6 oz. 210 gr. | 12 oz. 420 gr. |
| 0.80 | 1 oz. 123 gr. | 6 oz. 175 gr. | 12 oz. 350 gr. |
| 0.79 | 1 oz. 116 gr. | 6 oz. 140 gr. | 12 oz. 280 gr. |
| 0.78 | 1 oz. 109 gr. | 6 oz. 105 gr. | 12 oz. 210 gr. |
| 0.77 | 1 oz. 102 gr. | 6 oz. 70 gr. | 12 oz. 140 gr. |
| 0.76 | 1 oz. 95 gr. | 6 oz. 35 gr. | 12 oz. 70 gr. |
| 0.75 | 1 oz. 88 gr. | 6 oz. | 12 oz. |
| 0.74 | 1 oz. 81 gr. | 5 oz. 403 gr. | 11 oz. 368 gr. |
| 0.73 | 1 oz. 74 gr. | 5 oz. 368 gr. | 11 oz. 298 gr. |
| 0.72 | 1 oz. 67 gr. | 5 oz. 333 gr. | 11 oz. 228 gr. |
| 0.71 | 1 oz. 60 gr. | 5 oz. 298 gr. | 11 oz. 158 gr. |
| 0.70 | 1 oz. 53 gr. | 5 oz. 263 gr. | 11 oz. 88 gr. |
| 0.69 | 1 oz. 46 gr. | 5 oz. 228 gr. | 11 oz. 18 gr. |
| 0.68 | 1 oz. 39 gr. | 5 oz. 193 gr. | 10 oz. 385 gr. |
| 0.67 | 1 oz. 32 gr. | 5 oz. 158 gr. | 10 oz. 315 gr. |
| 0.66 | 1 oz. 25 gr. | 5 oz. 123 gr. | 10 oz. 245 gr. |
| 0.65 | 1 oz. 18 gr. | 5 oz. 88 gr. | 10 oz. 175 gr. |
| 0.64 | 1 oz. 11 gr. | 5 oz. 53 gr. | 10 oz. 105 gr. |
| 0.63 | 1 oz. 4 gr. | 5 oz. 18 gr. | 10 oz. 35 gr. |
| 0.62 | 434 gr. | 4 oz. 420 gr. | 9 oz. 403 gr. |
| 0.61 | 427 gr. | 4 oz. 385 gr. | 9 oz. 333 gr. |
| 0.60 | 420 gr. | 4 oz. 350 gr. | 9 oz. 263 gr. |
| 0.59 | 413 gr. | 4 oz. 315 gr. | 9 oz. 193 gr. |
| 0.58 | 406 gr. | 4 oz. 280 gr. | 9 oz. 123 gr. |
| 0.57 | 399 gr. | 4 oz. 245 gr. | 9 oz. 53 gr. |
| 0.56 | 392 gr. | 4 oz. 210 gr. | 8 oz. 420 gr. |
| 0.55 | 385 gr. | 4 oz. 175 gr. | 8 oz. 350 gr. |
| 0.54 | 378 gr. | 4 oz. 140 gr. | 8 oz. 280 gr. |
| 0.53 | 371 gr. | 4 oz. 105 gr. | 8 oz. 210 gr. |
| 0.52 | 364 gr. | 4 oz. 70 gr. | 8 oz. 140 gr. |
| 0.51 | 357 gr. | 4 oz. 35 gr. | 8 oz. 70 gr. |
| 0.50 | 350 gr. | 4 oz. | 8 oz. |

*Grains

| % | For 10 Lbs. | For 50 Lbs. | For 100 Lbs. |
|---|---|---|---|
| 0.49 | 343 gr. | 3 oz. 403 gr. | 7 oz. 368 gr. |
| 0.48 | 336 gr. | 3 oz. 368 gr. | 7 oz. 298 gr. |
| 0.47 | 329 gr. | 3 oz. 333 gr. | 7 oz. 228 gr. |
| 0.46 | 322 gr. | 3 oz. 298 gr. | 7 oz. 158 gr. |
| 0.45 | 315 gr. | 3 oz. 263 gr. | 7 oz. 88 gr. |
| 0.44 | 308 gr. | 3 oz. 228 gr. | 7 oz. 18 gr. |
| 0.43 | 301 gr. | 3 oz. 193 gr. | 6 oz. 385 gr. |
| 0.42 | 294 gr. | 3 oz. 158 gr. | 6 oz. 315 gr. |
| 0.41 | 287 gr. | 3 oz. 123 gr. | 6 oz. 245 gr. |
| 0.40 | 280 gr. | 3 oz. 88 gr. | 6 oz. 175 gr. |
| 0.39 | 273 gr. | 3 oz. 53 gr. | 6 oz. 105 gr. |
| 0.38 | 266 gr. | 3 oz. 18 gr. | 6 oz. 35 gr. |
| 0.37 | 259 gr. | 2 oz. 420 gr. | 5 oz. 403 gr. |
| 0.36 | 252 gr. | 2 oz. 385 gr. | 5 oz. 333 gr. |
| 0.35 | 245 gr. | 2 oz. 350 gr. | 5 oz. 263 gr. |
| 0.34 | 238 gr. | 2 oz. 315 gr. | 5 oz. 193 gr. |
| 0.33 | 231 gr. | 2 oz. 280 gr. | 5 oz. 123 gr. |
| 0.32 | 224 gr. | 2 oz. 245 gr. | 5 oz. 53 gr. |
| 0.31 | 217 gr. | 2 oz. 210 gr. | 4 oz. 420 gr. |
| 0.30 | 210 gr. | 2 oz. 175 gr. | 4 oz. 350 gr. |
| 0.29 | 203 gr. | 2 oz. 140 gr. | 4 oz. 280 gr. |
| 0.28 | 196 gr. | 2 oz. 105 gr. | 4 oz. 210 gr. |
| 0.27 | 189 gr. | 2 oz. 70 gr. | 4 oz. 140 gr. |
| 0.26 | 182 gr. | 2 oz. 35 gr. | 4 oz. 70 gr. |
| 0.25 | 175 gr. | 2 oz. | 4 oz. |
| 0.24 | 168 gr. | 1 oz. 403 gr. | 3 oz. 368 gr. |
| 0.23 | 161 gr. | 1 oz. 368 gr. | 3 oz. 298 gr. |
| 0.22 | 154 gr. | 1 oz. 333 gr. | 3 oz. 228 gr. |
| 0.21 | 147 gr. | 1 oz. 298 gr. | 3 oz. 158 gr. |
| 0.20 | 140 gr. | 1 oz. 263 gr. | 3 oz. 88 gr. |
| 0.19 | 133 gr. | 1 oz. 228 gr. | 3 oz. 18 gr. |
| 0.18 | 126 gr. | 1 oz. 193 gr. | 2 oz. 385 gr. |
| 0.17 | 119 gr. | 1 oz. 158 gr. | 2 oz. 315 gr. |
| 0.16 | 112 gr. | 1 oz. 123 gr. | 2 oz. 245 gr. |
| 0.15 | 105 gr. | 1 oz. 88 gr. | 2 oz. 175 gr. |
| 0.14 | 98 gr. | 1 oz. 53 gr. | 2 oz. 105 gr. |
| 0.13 | 91 gr. | 1 oz. 18 gr. | 2 oz. 35 gr. |
| 0.12 | 84 gr. | 420 gr. | 1 oz. 403 gr. |
| 0.11 | 77 gr. | 385 gr. | 1 oz. 333 gr. |
| 0.10 | 70 gr. | 350 gr. | 1 oz. 263 gr. |
| 0.09 | 63 gr. | 315 gr. | 1 oz. 193 gr. |
| 0.08 | 56 gr. | 280 gr. | 1 oz. 123 gr. |
| 0.07 | 49 gr. | 245 gr. | 1 oz. 53 gr. |
| 0.06 | 42 gr. | 210 gr. | 420 gr. |
| 0.05 | 35 gr. | 175 gr. | 350 gr. |
| 0.04 | 28 gr. | 140 gr. | 280 gr. |
| 0.03 | 21 gr. | 105 gr. | 210 gr. |
| 0.02 | 14 gr. | 70 gr. | 140 gr. |
| 0.01 | 7 gr. | 35 gr. | 70 gr. |

## DIRECTIONS FOR USE

In giving these weights, we have confined ourselves entirely to pounds, ounces and grains, leaving out drachms and scruples.

If 60 lbs. of material is to be dyed with 1.69% of color, proceed as follows:

For 10 lbs., 1% equals 1 oz. 263 gr.
For 50 lbs., 1% equals 8 oz.
For 60 lbs., 1% equals 9 oz. 263 gr. 9 oz. 263 gr.

For 10 lbs., 0.69% equals 1 oz. 46 gr.
For 50 lbs., 0.69% equals 5 oz. 228 gr.
For 60 lbs., 0.69% equals 6 oz. 274 gr. 6 oz. 274 gr.

1.69% 15 oz. 537 gr.
or 1 lb. 99 gr.

| | | | |
|---|---|---|---|
| 1 | National Quinoline Yellow | ½% | 2% |
| 2 | National Milling Yellow NGS | ½% | 2% |
| 3 | National Fast Wool Yellow 3GL | ½% | 2% |
| 4 | National Fast Light Yellow 2G | ½% | 2% |
| 5 | National Naphthol Yellow S | ½% | 2% |
| 6 | National Milling Yellow XN | ½% | 2% |

| | | | |
|---|---|---|---|
| 7 | National Wool Yellow Extra Conc. | ½% | 2% |
| 8 | National Milling Yellow 3G | ½% | 2% |
| 9 | National Milling Yellow GGCW | ½% | 2% |
| 10 | National Milling Yellow O Conc. | ½% | 2% |
| 11 | National Fast Acid Yellow GS | ½% | 2% |
| 12 | National Azo Yellow A5W | ½% | 2% |

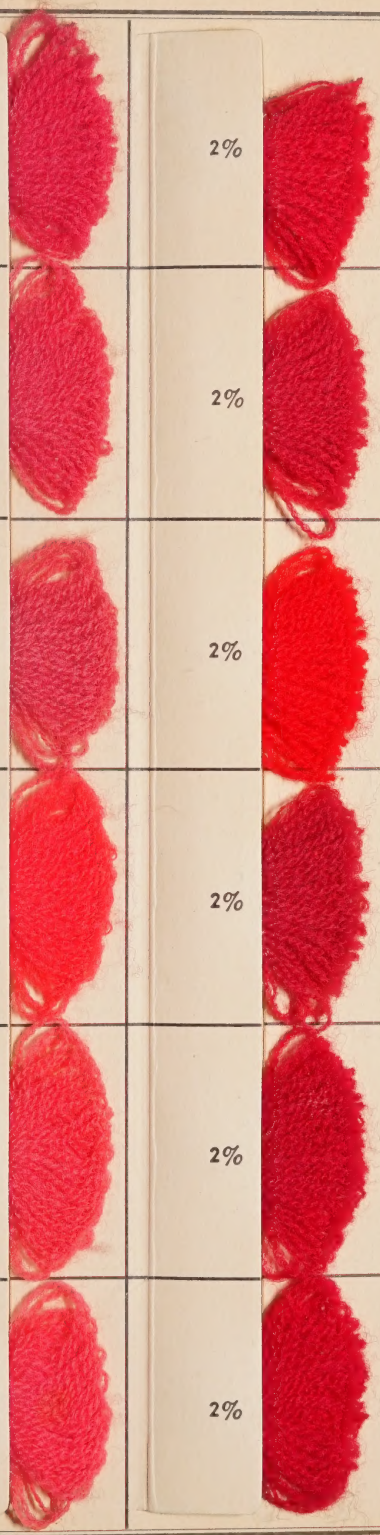
| | | | |
|---|---|---|---|
| 13 | National Metanil Yellow 1955 C.I. 138 | 1/4% | 1% |
| 14 | National Resorcine Yellow C.I. 148 | 1/2% | 2% |
| 15 | National Milling Orange GR | 1/2% | 2% |
| 16 | National Wool Orange GG Crystals | 1/2% | 2% |
| 17 | National Croceine Orange Y Conc. | 1/2% | 2% |
| 18 | National Wool Orange A Conc. | 1/2% | 2% |

| | | | |
|---|---|---|---|
| 19 | National Milling Orange G | ½% | 2% |
| 20 | National Milling Orange R | ½% | 2% |
| 21 | National Wool Orange R Conc. | ½% | 2% |
| 22 | National Lake Scarlet G | ¾% | 2% |
| 23 | National Acid Milling Red G | ¾% | 2% |
| 24 | National Lake Scarlet R | ¾% | 2% |

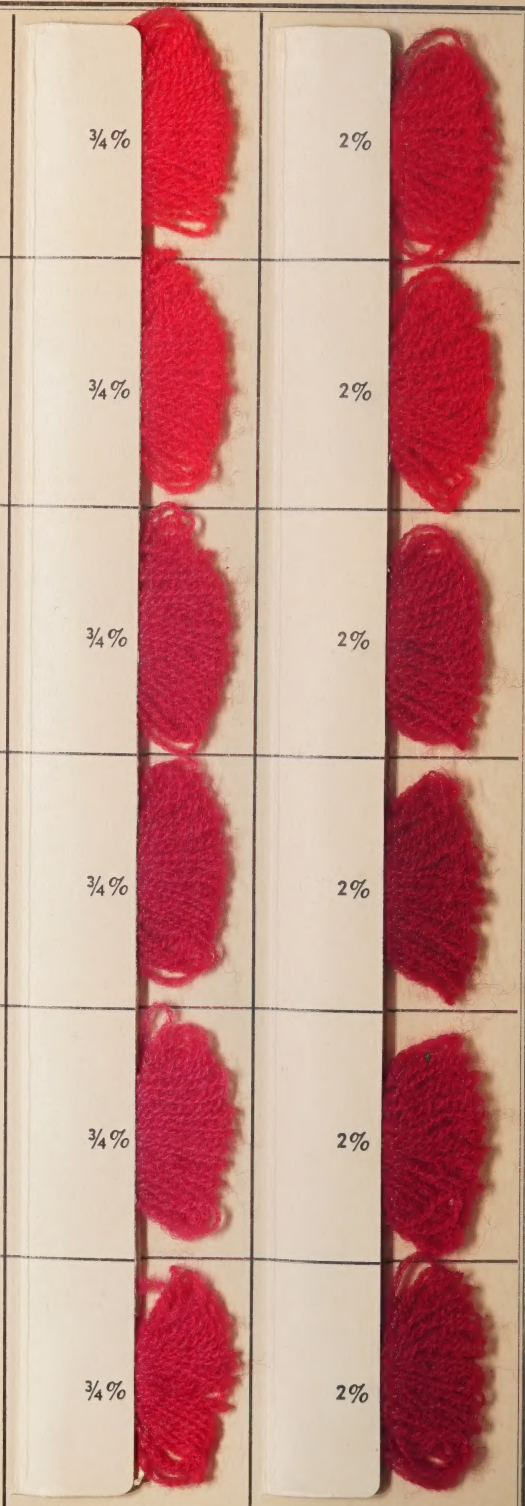
| | | | |
|---|---|---|---|
| 25 | National Milling Scarlet G Conc. | ¾% | 2% |
| 26 | National Erie Scarlet B | ¾% | 2% |
| 27 | National Croceine Scarlet MOO | ¾% | 2% |
| 28 | National Cloth Red G | ¾% | 2% |
| 29 | National Wool Scarlet BR | ¾% | 2% |
| 30 | National Brilliant Scarlet 3R | ¾% | 2% |

| | | | |
|---|---|---|---|
| 31 | National Acid Milling Red RN | ¾% | 2% |
| 32 | National Milling Red R | ¾% | 2% |
| 33 | National Fast Red S Conc. | ¾% | 2% |
| 34 | National Erie Fast Red FD | ¾% | 2% |
| 35 | National Cloth Red R | ¾% | 2% |
| 36 | National Erie Scarlet 3B | ¾% | 2% |

| | | | |
|---|---|---|---|
| 37 | National Fast Crimson GR | ½% | 2% |
| 38 | National Acid Light Red G | ¾% | 2% |
| 39 | National Fast Fuchsine G | ½% | 2% |
| 40 | National Fast Wool Red GL | ¾% | 2% |
| 41 | National Fast Crimson R | ½% | 2% |
| 42 | National Wool Red 40F | ¾% | 2% |

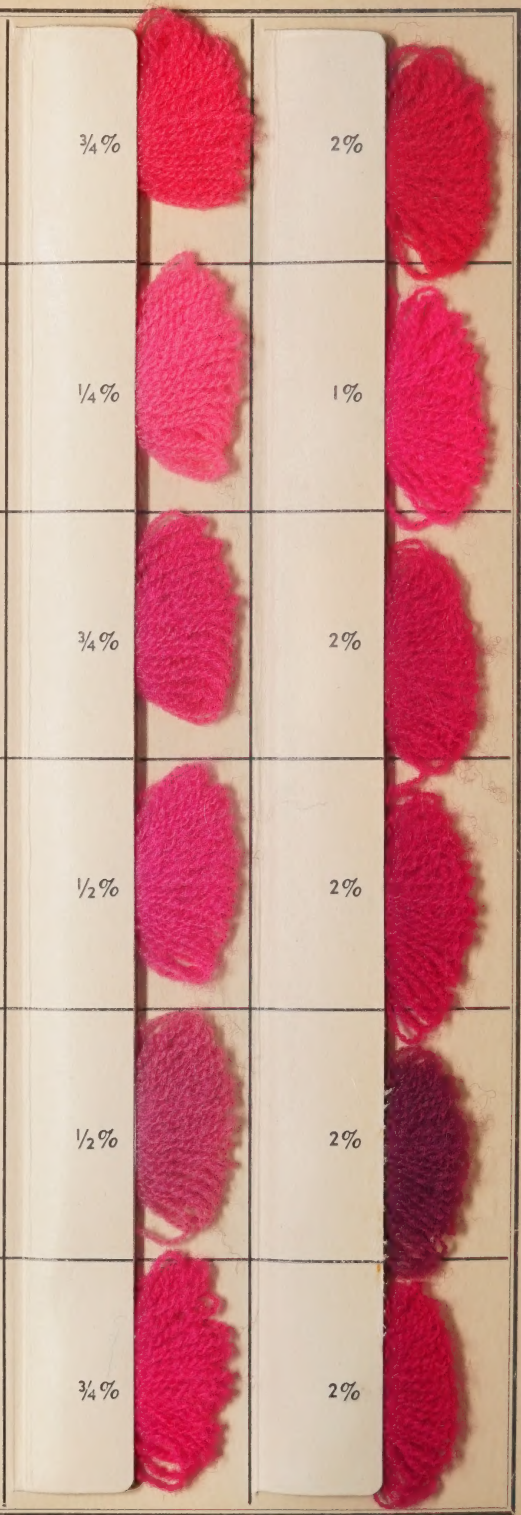


| | | | |
|---|---|---|---|
| 43 | National Azo Rubine Extra | ¾% | 2% |
| 44 | National Cloth Red 2R | ¾% | 2% |
| 45 | National Milling Red B Conc. | ¾% | 2% |
| 46 | National Cloth Red B | ¾% | 2% |
| 47 | National Azo Bordeaux | ¾% | 2% |
| 48 | National Azo Bordeaux SS Conc. | ¾% | 2% |

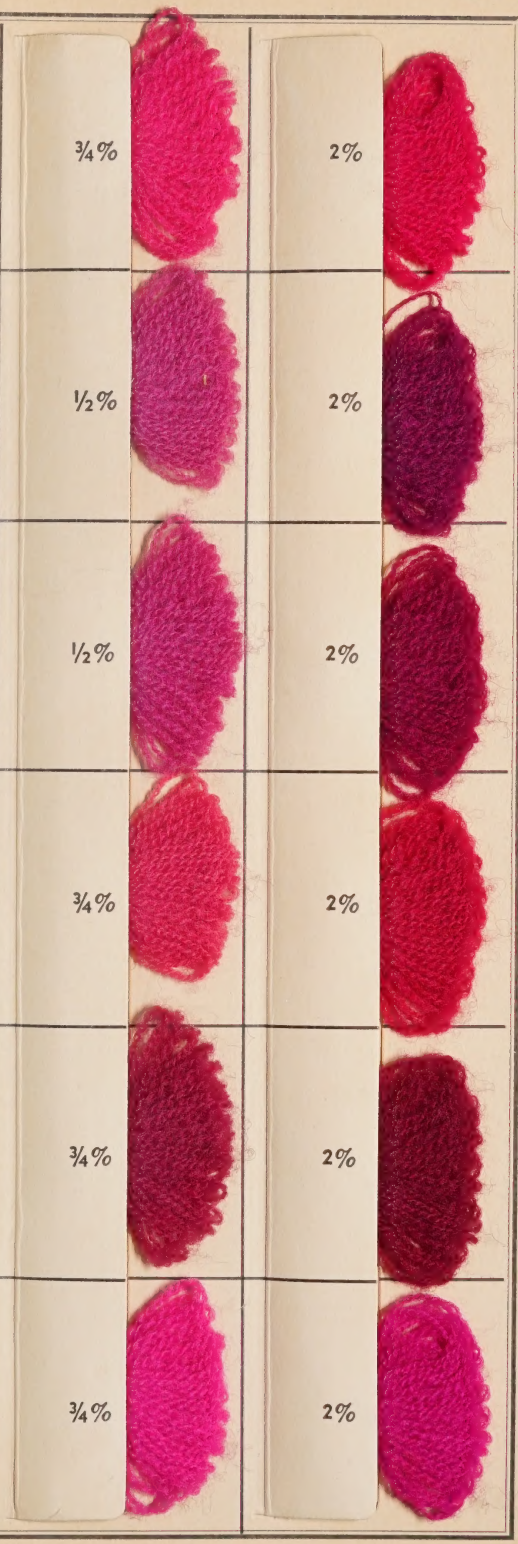


| | | | |
|---|---|---|---|
| 49 | National Eosine YS | ¼% | 1% |
| 50 | National Eosine OJ | ¼% | 1% |
| 51 | National Eosine BS | ¼% | 1% |
| 52 | National Rhodamine 6GDN Extra | ¼% | 1% |
| 53 | National Erythrosine | ¼% | 1% |
| 54 | National Rhodamine B | ¼% | 1% |

| | | | |
|---|---|---|---|
| 55 | National Brilliant Milling Red B Conc. | ¾% | 2% |
| 56 | National Rose Bengal | ¼% | 1% |
| 57 | National Brilliant Milling Red 3B | ¾% | 2% |
| 58 | National Acid Brilliant Red 4BL | ½% | 2% |
| 59 | National Fast Wool Red BL | ½% | 2% |
| 60 | National Acid Brilliant Red BNR | ¾% | 2% |



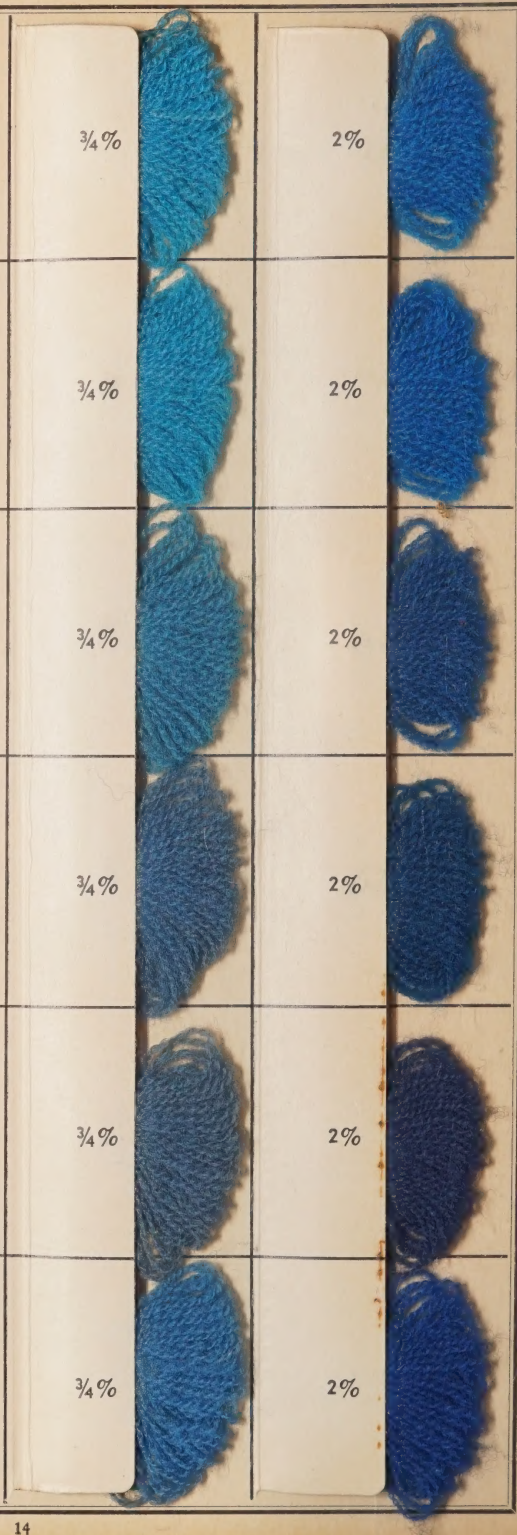
| | | | |
|---|---|---|---|
| 61 | National Acid Alizarine Red GWN | ¾% | 2% |
| 62 | National Fast Fuchsine 6B | ½% | 2% |
| 63 | National Fast Crimson 6BL | ½% | 2% |
| 64 | National Acid Fuchsine D | ¾% | 2% |
| 65 | National Acid Bordeaux B | ¾% | 2% |
| 66 | National Fast Acid Violet GRF | ¾% | 2% |



| | | | |
|---|---|---|---|
| 67 | National Alizarine Violet AD | ¾% | 2% |
| 68 | National Fast Wool Violet 2R | ¾% | 2% |
| 69 | National Azo Wool Violet 4B C.I. 53 | ¾% | 2% |
| 70 | National Wool Violet 4BN C.I. 698 | ½% | 2% |
| 71 | National Wool Violet 5BN | ½% | 2% |
| 72 | National Acid Fast Violet BG | ½% | 2% |

| | | | | |
|---|---|---|---|---|
| 73 | National Brilliant Acid Blue 6BN | ¾% | | 2% | |
| 74 | National Brilliant Wool Blue B | 1% | | 3% | |
| 75 | National Brilliant Wool Blue FFR Extra | ¾% | | 2% | |
| 76 | National Brilliant Wool Blue G Extra | ¾% | | 2% | |
| 77 | National Alizarine Fast Blue RB | ¾% | | 2% | |
| 78 | National Alizarine Sapphire BLN | ¾% | | 2% | |

| | | | |
|---|---|---|---|
| 79 | National Brilliant Wool Blue FFB Extra | ¾% | 2% |
| 80 | National Brilliant Acid Blue GI | ¾% | 2% |
| 81 | National Alizarine Blue GS | ¾% | 2% |
| 82 | National Alizarine Sapphire FS C.I. 1054 | ¾% | 2% |
| 83 | National Fast Light Blue BL | ¾% | 2% |
| 84 | National Alizarine Blue GRL C.I. 1088 | ¾% | 2% |



| | | | |
|---|---|---|---|
| 85 | National Alizarine Sapphire C.I. 1054 | ¾% | 2% |
| 86 | National Alizarine Sapphire BN C.I. 1054 | ¾% | 2% |
| 87 | National Indigotine C.I. 1180 | 1% | 3% |
| 88 | National Alizarine Sapphire 2GL | ¾% | 2% |
| 89 | National Brilliant Wool Blue N | 1% | 3% |
| 90 | National Alizarine Sapphire SE C.I. 1053 | ¾% | 2% |

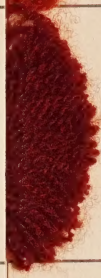
| | | | |
|---|---|---|---|
| 91 | National Wool Fast Blue GL | ¾% | 2% |
| 92 | National Wool Fast Blue BL | ¾% | 2% |
| 93 | National Fast Wool Blue B | 1% | 3% |
| 94 | National Fast Wool Blue R | 1% | 3% |
| 95 | National Wool Blue CGW | 1½% | 3% |
| 96 | National Wool Blue CGG | 1½% | 3% |

| | | | |
|---|---|---|---|
| 97 | National Fast Wool Cyanone G | 1% | 3% |
| 98 | National Azo Fast Blue G High Conc. | 1% | 2½% |
| 99 | National Fast Wool Cyanone R | 1% | 3% |
| 100 | National Azo Fast Blue 2R High Conc. | 1% | 2½% |
| 101 | National Azo Fast Blue B High Conc. | 1% | 2½% |
| 102 | National Wool Navy Blue B | 1% | 2½% |

| | | | |
|---|---|---|---|
| 103 | National Induline B Extra | 1% | 3% |
| 104 | National Fast Wool Cyanone 3R | 1% | 3% |
| 105 | National Milling Navy Blue 4B | 1% | 3% |
| 106 | National Fast Acid Blue WF | 1% | 3% |
| 107 | National Alphazurine 2G | ½% | 2% |
| 108 | National Alphazurine B Conc. | ¼% | 1% |

| | | | |
|---|---|---|---|
| 109 National Alphazurine FG | ½% | | 2% | |
| 110 National Alphazurine A | ½% | | 2% | |
| 111 National Fast Acid Green B C.I. 667 | ½% | | 2% | |
| 112 National Wool Green S C.I. 737 | 1% | | 3% | |
| 113 National Alizarine Cyanone Green G Extra | ½% | | 2½% | |
| 114 National Acid Green L Extra | 1% | | 3% | |

| | | | |
|---|---|---|---|
| 115 | National Alkali Fast Green 2G | 1% | 3% |
| 116 | National Alkali Fast Green 10G | 1% | 3% |
| 117 | National Naphthol Green B C.I. 5 | 1% | 3% |
| 118 | National Resorcine Brown Y C.I. 234 | 1% | 3% |
| 119 | National Resorcine Brown R C.I. 234 | 1% | 3% |
| 120 | National Resorcine Brown 3R C.I. 234 | 1% | 3% |

| | | | |
|---|---|---|---|
| 121 National Fast Acid Brown RG | ¾% | | 2% | |
| 122 National Neutral Brown AN | 1% | | 2% | |
| 123 National Neutral Brown RN | 1% | | 2% | |
| 124 National Resorcine Brown RN C.I. 235 | 1% | | 3% |  |
| 125 National Neutral Brown RD | ¾% | | 2% | |
| | | | | |

| | | | |
|---|---|---|---|
| 126 | National Buffalo Black 3G | 2% | 6% |
| 127 | National Buffalo Black 8B | 2% | 6% |
| 128 | National Buffalo Black NB | 2% | 6% |
| 129 | National Buffalo Black NBR | 2% | 6% |
| 130 | National Buffalo Black 10B | 2% | 6% |
| 131 | National Durol Black 2B | 2% | 6% |

| | | | |
|---|---|---|---|
| 132 Mixture<br>National<br>Fast Acid Grey JE | ½% | | 2% | |
| 133<br>National<br>Buffalo Black AR | 2% | | 6% | |
| 134<br>National<br>Milling Black B | 2% | | 6% | |
| 135<br>National<br>Buffalo Black RB | 2% | | 6% | |
| 136<br>National<br>Durol Black BA<br>C.I. 307 | 2% | | 6% | |
| 137<br>National<br>Durol Black B<br>C.I. 307 | 2% | | 6% | |

| | | | |
|---|---|---|---|
| 138 Mixture | National Durol Black J | 2% | 6% |
| 139 C.I. 24 | National Buffalo Black GRF Conc. | 2% | 6% |
| 140 | National Buffalo Jet Black EM | 2% | 6% |
| 141 | National Buffalo Black CW | 2% | 6% |
| | | | |
| | | | |

# NATIONAL SERVICE

THE National Aniline & Chemical Company, Inc., is convinced that the essence of all good-will is intelligent service.

In accordance with this conviction, the National Aniline & Chemical Company, Inc., maintains a fully equipped laboratory, a trained technical staff, and an experienced sales organization at each branch office. This practical dyeing service is freely placed at the disposal of its customers for the matching of shades and for assistance in the solution of dyeing problems.

Shade cards, illustrating the application of National Dyes on all classes of materials are prepared and distributed to those interested in dyeing.

The improvement of dyeing technique is the key-note of National Service.

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